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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,526	10/29/2003	Shi-Tron Lin	500-003	6387

24002 7590 12/30/2005

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EXAMINER
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CRANE, SARA W

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 12/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/696,526	<b>Applicant(s)</b> LIN ET AL.	
	<b>Examiner</b> Sara W. Crane	<b>Art Unit</b> 2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 October 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

In view of the amendments and remarks in the papers of 11 October 2005, the requirement for election of 8 September 2005 is withdrawn.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, line 10, "a first part" of the channel region is recited. In line 11, "a third part" of the channel region is recited. No "second part" is mentioned, which is confusing. Also, in claim 11, "said second" part of a channel region is recited, and claim 1 does not provide any antecedent for a second part of a channel. In claim 14, lines 5-6, "said doped region" has unclear antecedent. Both a "first doped region" and a "second doped region" are recited in claim 1. Also, in the last line of claim 11, what is meant by "a stack-gate structure"? Is something stacked? In, for example, figure 8, the first and second gate segments would correspond to, perhaps, 81 and 82, but in what sense is this a "stack-gate" structure?

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, insofar as understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Cheng et al., 6,465,308.

With respect to claim 1, the cover figure of Cheng et al. shows and ESD protection device (abstract), having a p type semiconductor bulk substrate 22, a first doped region of n+ type 26, and a second doped region of n+ type 28. A channel extends between 26 and 28. A "first part of said channel region" is read on, for example, the part of the channel extending from drain 26 to the center of the channel, and a "third part of said channel region" is read on the part of the channel extending from source 28 to the center of the channel. (The claim provides no limitations on how to identify the various parts of the channel, so a "broadest reasonable interpretation" is adopted.) 38 provides a gate, with a "first gate segment" read on the part of 38 which lies over the part of the channel extending from drain 26 to the center of the channel. 24 is a "first field oxide stripe" which is formed over the part of the channel which extends from source 28 to the center of the channel. All parts of the "first gate segment" overlap the "first field-oxide stripe."

With respect to claim 2, "a first end" is recited, without specifying what structure has the "end." The "first part of said channel region," identified above, is at the end of the channel. With respect to claim 3, the "first" and "third" parts of the channel identified above form a continuous portion of the channel. With respect to claim 4, the gate and the field-oxide are collinear, when viewed from the top, for example, because both extend along the length of the channel. With respect to claim 5, 38 is polysilicon (column 4, line 65).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6-13 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. in view of Lin et al, 6,574,568.

With respect to claims 6 and 7, Lin et al. shows in figure 7 two types of islands, a first type having polysilicon-over-oxide, exemplified by 20a, and a second type having field-oxide, exemplified by 20b. As shown in figure 6, arrays (at least linear arrays) are intended. It would have been obvious to form islands as taught by Lin et al. within the drain areas of the Cheng device, in order to enhance esd protection as taught in the Lin reference. With respect to claims 8 and 26, figure 6 of Lin et al. shows the islands of type 20a closer to the channel region. With respect to claim 9, 40D is a "second gate

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segment." A "second part of said channel region" is read on the part of the channel region that extends from the center of the channel to the left hand edge of 40D. (This would leave the rest of the channel, from the left edge of 40D to 28, as the "third part" of the channel. With respect to claim 10, the "first part" of the "second gate segment" is at the end of 40D. With respect to claim 11, insofar as understood, the "second" and "third" parts identified above are continuous. With respect to claims 12 and 13, the circuit arrangements would have been obvious in order to provide for the desired esd protection, as shown in for example the cover figure of Lin et al.

Claims 14-25 would be allowable if expressed in completed form, and if the above issues under 112, second paragraph, are overcome.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Crane, whose telephone number is (571) 272-1652.

The supervisor for Art Unit 2811, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read "Sara W. Crane". The signature is fluid and cursive, with the first name "Sara" being more prominent.

Sara W. Crane  
Primary Examiner  
Art Unit 2811